Heart to Heart: Norwegian-Russian multilevel educational collaboration in CVD epidemiology

Master-level online course

Basic Epidemiology Of Cardiovascular Diseases

UiT - The Arctic University of Norway
Department of Community Medicine

26-29 April 2021

CURRICULUM

COURSE LEADER

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COURSE DESCRIPTION

Epidemiology of cardiovascular diseases (CVDs) is a discipline that studies the distribution and determinants of CVDs in the population. The discipline is of a high relevance internationally because CVDs comprise the leading cause of morbidity and mortality worldwide. Key risk factors include hypertension, smoking, elevated cholesterol, elevated glucose level and diabetes, obesity, physical inactivity, and alcohol. Russia has one of the highest CVD mortality rates in the world. In 2015, the mortality rate in Russia was four times higher than in England and Norway, and there are no definitive explanations for that.

To investigate this phenomenon, the Know Your Heart (KYH) cross-sectional study was conducted in Arkhangelsk and Novosibirsk in 2015-2018 as a part of the International Project on Cardiovascular Disease in Russia (IPCDR). In 2015-2016, a similar study of CVDs was conducted as part of Tromsø Study 7 (T7) - the seventh wave of the population health study in Tromsø, Norway. The KYH study has been designed to be comparable to the T7, and this has laid a basis for Heart to Heart (H2H) - a joint plan for a series of comparative studies to identify and quantify differences in CVD and its determinants between Russia and Norway.

The KYH, the T7, and the H2H studies generate a solid knowledge basis for training public health specialists on both sides of the border with an emphasis on CVD epidemiology and prevention. This situation has become a ground pillar for this course to appear. The course is run by the leading H2H researchers and uses data-driven examples from the KYH, the T7, and the H2H. For these reasons, the course is particularly targeting students which already use (or may later use) the H2H data for their Master theses or other research projects.

The purpose of the course is to impart knowledge of the distribution and determinants of CVDs in the population. The emphasis is on the epidemiological methods used to generate new knowledge for effective CVD prevention.

Teaching is concentrated in one intensive online gathering (4 days) at which lectures are combined with group exercises and discussions.

To fully benefit from the course, a student is expected to have basic knowledge of epidemiology and statistics at the entry. For the same purpose, the students are asked to read the course literature before the online gathering.

The final assessment of students is performed via written take-home examination that has to be completed in four weeks after the gathering.

LANGUAGE OF INSTRUCTION

English

TARGET GROUPS

Group 1. Master students in health and social sciences at UiT

Master students in Public and other health-related and social sciences at the UiT can be accepted to the course. There are no specific prerequisites.

Group 2. Master students in Public Health at the International School of Public Health, Arkhangelsk (ISPHA), NSMU

The course is an elective part of the MPH programme at the ISPHA. Good knowledge of English (upper intermediate level)* is the only prerequisite for ISPHA's MPH students to be accepted.

Group 3. Students from other Norwegian and Russian universities

Students from other Russian and Norwegian higher educational institutions are welcome to apply for the course. It is also possible for these students to expand this course with preparatory assignment and home exam to apply for using this course as a part of Master education. At least a Bachelor degree (or its equivalent) in health and social sciences and good knowledge of English (upper intermediate level)* is a prerequisite for being accepted.

* The required knowledge of English can be documented by an internationally recognized proficiency test (TOEFL written form – min. 550 points, TOEFL computer based – min. 213 points). For Russian students, the required knowledge of English can be documented by a result of English test at the Northern State Medical University.

Maximum total number of students in the course - 24.

LEARNING GOALS

Upon satisfactory completion of the course, a student will:

- be aware of the global burden of CVDs, key risk factors, and substantive questions in CVD epidemiology;

- appropriately use epidemiologic concepts and terms in relation to CVD research at the population level;

- get acquainted with designs and examples of epidemiologic research in the CVD field, understand relative merits of different designs;

- be familiar designs and methodological principles of the KYH and the T7 studies and the H2H comparative study of CVDs in Russia and Norway;

- be aware of common mistakes and omissions in CVD study designs and their implications in terms of sampling error, measurement error, and confounding;

- acquire basic practical skills in designing an epidemiologic study of CVDs;

- acquire basic skills of critical evaluation of published CVD research.

TEACHING METHODS

- One online gathering (Zoom meetings, 4 days) including lectures, individual and group practical exercises, seminars

- Sources of educational information: lectures, textbooks, scientific publications

COURSE LITERATURE

- Approximately 650 pages
- Compulsory course literature:
- Epidemiology and Prevention of Cardiovascular Disease: A Global Challenge Second (2nd) Edition by Darwin R. Labarthe; 2011 (selected chapters). Link: https://shdrc.skums.ac.ir/dorsapax/userfiles/file/CVD_Epidemiology_Labarthe_2011.pdf
- Articles (will be provided by teachers)

- Recommended additional reading:
- Basic epidemiology by R. Bonita, R. Beaglehole, T. Kjellström: http://apps.who.int/iris/bitstream/handle/10665/43541/9241547073_eng.pdf?sequence=1
- Concepts of Epidemiology: An integrated introduction to the ideas, theories, principles and methods of epidemiology by Kenneth Raj S. Bhopal. Link: https://skums.ac.ir/dorsapax/userfiles/file/Epidemiology_Concepts_2002.pdf

HOW TO APPLY?

The application shall contain:

- Letter of application (free format)

- CV (containing a complete overview of education, supervised professional training and professional work)

- Copies of:

  - *diploma and transcript from a Bachelor's degree or equivalent*

  - *documentation of required English skills*

Application shall be emailed to Tormod Brenn at UiT e-mail tormod.brenn@uit.no.

Deadline for applications - **08 April, 2021**.

FOR ISPHA's MPH STUDENTS

WORKLOAD

WORKLOAD

Preparatory assignment (reading of approx. 200 pages):	40 hours
Online gathering (4 days)	30 hours
Home exam (including reading of approx. 300 pages):	74 hours
Total:	**144 hours** (4 Russian credit points)

EXAMINATION

- The final course grade is given on the basis of a written take-home examination

- What is to be tested: knowledge of concepts and methods of CVD epidemiology, skills in applying knowledge in practice

- Grading: PASSED/FAILED

- Presence at the online gathering is compulsory for passing

- A student has a right to be given two opportunities to re-sit final take-home examination after having "FAILED" (first – in 4-5 weeks after the regular exam, second – when the same exam is arranged in the next year course).

DATE FOR EXAMINATION

- Take-home examination hand out date - 29.04.2021, hand in date - 31.05.2021.

LISTENER STATUS

It is possible to apply for the course as a listener. That would mean the registered person gets access to online lectures and other course materials but does not have a preparatory assignment and home exam, and does not get the course certificate and ECTS points. In order to apply for the course as a listener, it is sufficient to send a Letter of application in free format and a CV (overview of education, supervised professional training, and professional work) to tormod.brenn@uit.no

Times are for Norway - Arkhangelsk and Moscow add 1 hour, Novosibirsk 5 and UK -1

	Monday, April 26
10:00	Introduction, student presentation: *Aleksei Kalinin, Tormod Brenn* Types and Global Burden CVDs: *Sofia Malyutina*
11:30	Break
12:30	Social inequalities in cardiovascular health - Norway: Inger Njølstad Life style risk factors: Inger Njølstad
14:00	Break
14:30	The Tromsø Study 7: *Laila Hopstock* "Know your heart" cross-sectional survey: *Sarah Cook* Heart to Heart - comparing Russia and Norway on CVDs: *Alexander Kudryavtsev*
16:00	End

	Tuesday, April 27
10:00	What can we gain from H2H? Student group work/discussion: *Alexander Kudryavtsev, Laila Hopstock, Aleksei Kalinin*
11:30	Break
12:30	Study designs in CVD research: *David Leon* Selection bias in studies of CVDs: *Alexander Kudryavtsev*
14:00	Break
14:30	Measurement errors in CVD research: *Olena Iakunchykova* Confounding and interaction in CVD research: *Sarah Cook*
16:00	End

	Wednesday, April 28
10:00	Critical appraisal of published CVD research. Student group work/discussion: *Alexander Kudryavtsev, Olena Iakunchykova, Tormod Brenn*
11:30	Break
12:30	Atrial fibrillation - recent research findings and new questions: *Hilde Espnes* Arterial hypertension and lipid profiles: *Sofia Malyutina*
14:00	Break
14:30	Biomarkers of CVDs and findings from H2H study: *Olena Iakunchykova* CVD mortality : past, present and future: *David Leon*
16:00	End

	Thursday, April 29
10:00	What explains the decline in CVD mortality in Western countries? Student group work/discussion: *Alexander Kudryavtsev, Olena Iakunchykova, Tormod Brenn*
11:30	Break
12:30	Environmental burden of CVDs: *Tatiana Unguryanu* Factors associated with a long life: *Tormod Brenn*
14:00	Break
14:30	Global health and CVDs: What preventive interventions are effective? *Inger Njølstad* How to reduce the CVD burden in Russia? Summary course discussion: *All students, David Leon, Alexander Kudryavtsev, Tormod Brenn*
16:00	End